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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,958	03/23/2001	Alvin D. Compaan	1-22335	6483

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EXAMINER

LE, DUNG ANH

ART UNIT PAPER NUMBER

2818

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/815,958

Applicant(s)

COMPAAN ET AL.

Examiner

DUNG A LE

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-7,9-12,29-32,34-37 and 39-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9-12,29-32,34-37 and 39-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

DETAILED ACTION

**Response to Amendment**

This Office Action is in response to Amendment filed on 2/26/2004.

Claims 2, 8, 13-28, 33, 38, 42 and 43 have been cancelled.

Claims 1, 7, 29 and 34 have been amended.

Claims 1, 3-7, 9-12, 29- 32, 34- 37 and 39- 41 are pending in the present application at the time of examination.

**Claim Rejections**

This is a new ground of the rejection based on the new prior art. The previous Office Action has been withdrawn.

**Set of claims 1-6 and 40**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-5 are rejected under 35 USC 102 (b) as being anticipated by Kudo et al. (5635310).**

Kudo et al. teaches a method of making a semiconductor comprising depositing a group II-group VI compound onto a substrate in the presence of nitrogen in a gaseous form ((col 3, line 37) using sputtering to produce a nitrogen doped p-type semiconductor (ZnS, col 3, line 25).

**Regarding claim 3,** the group II-group VI compound is one or more compounds of the group zinc telluride, zinc selenide, zinc sulfide, mercury selenide, mercury telluride, mercury sulfide, cadmium sulfide, cadmium telluride, cadmium selenide, magnesium telluride, and magnesium selenide. (see Title)

**Regarding claim 4,** the sputtering is RF sputtering (Abstract and col 4, line 36).

**Regarding claim 5,** the sputtering is reactive sputtering (3, line 56).

**Claims 6 and 40 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kudo et al. et al. as applied to claim 1 above and in view of the following remark.**

**Regarding claim 6,** Kudo et al. do not teach sputtering step creates a layer of the doped group II-group VI compound that is larger than about 4 cm<sup>2</sup>.

Since applicant has not disclosed that the abovementioned limitation solve any stated problem or is for any particular purpose and it appears that the invention would perform equally well with Kudo et al. 's area. or any other areas may used.

**Regarding claim 40,** Kudo et al. et al. do not teach the group II-group VI compound is zinc telluride

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the group II-group VI compound is zinc telluride which are commonly used to obtain the best resultant semiconductor, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended application

**Set of claims 7, 9-12 and 41**

**Claims 7- 11 are rejected under 35 USC 102 (b) as being anticipated by Kudo et al. (5635310).**

Kudo et al. discloses a method of making a photovoltaic cell comprising using sputtering to apply a p-type back contact layer of group II group VI compound to a substrate in the presence of nitrogen in a gaseous form, the back coating layer being doped with nitrogen (col3, lines 60-67).

**Regarding claim 8,** the nitrogen is in a gaseous form during the sputtering.

**Regarding claim 9**, the group II-group VI compound is one or more compounds of the group zinc telluride, zinc selenide (see Title), zinc sulfide, mercury selenide, mercury telluride, mercury sulfide, cadmium sulfide, cadmium telluride, cadmium selenide, magnesium telluride, and magnesium selenide.

**Regarding claim 10**, the sputtering is RF sputtering (col 4, line 37).

**Regarding claim 11**, the sputtering is reactive sputtering.(col 3, line 56).

**Claims 12 and 41 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kudo et al. et al. as applied to claim 7 above and in view of the following remark.**

**Regarding claim 12**, Kudo et al. do not teach sputtering step creates a layer of the doped group II-group VI compound that is larger than about 4 cm<sup>2</sup>.

Since applicant has not disclosed that the abovementioned limitation solve any stated problem or is for any particular purpose and it appears that the invention would perform equally well with Kudo et al. 's area. or any other areas may used.

**Regarding claim 41**, Kudo et al. et al. do not teach the group II-group VI compound is zinc telluride

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the group II-group VI compound is zinc telluride which are commonly used to obtain the best resultant semiconductor, since it has been held to be

within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended application.

**Set of claims 29- 32.**

**Claims 29- 31 are rejected under 35 USC 102 (b) as being anticipated by Kudo et al. (5635310).**

Kudo et al. discloses a method of making a semiconductor comprising depositing a group II-group VI compound onto a substrate using sputtering to produce a nitrogen-doped p-type semiconductor (col3, lines 60- 67), wherein the sputtering is carried out in an atmosphere containing an amount of nitrogen in a gaseous form within the range of from about 0.5 percent to about 3 percent. (col 2, line 45).

**Regarding claim 30, in which the remainder of the atmosphere is argon gas (Col 3, line 66).**

**Regarding claim 31, the group II-group VI compound is one or more compounds of the group zinc telluride, zinc selenide (refer to Title), zinc sulfide, mercury selenide, mercury telluride, mercury sulfide, cadmium sulfide, cadmium telluride, cadmium selenide, magnesium telluride, and magnesium selenide.**

**Claim 32 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Kudo et al. et al. as applied to claim 29 above and in view of the following remark.**

Kudo et al. et al. do not teach the group II-group VI compound is zinc telluride

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the group II-group VI compound is zinc telluride which are commonly used to obtain the best resultant semiconductor, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended application.

**Set of claims 34, 36 - 37 and 39**

**Claims 29- 31 are rejected under 35 USC 102 (b) as being anticipated by Kudo et al. (5635310).**

Kudo et al. discloses a method of making a photovoltaic cell comprising using sputtering to apply a back contact p-type layer of group II group VI compound to a substrate in the presence of nitrogen, the back coating layer being doped with nitrogen, wherein the sputtering is carried out in an atmosphere containing an amount of nitrogen in a gaseous form ( col3, lines 60-67) within the range of from about 0.5 percent to about 3 percent (col2, line 45).

**Regarding claim 35, the remainder of the atmosphere is argon gas (col 3. line 66).**

**Regarding claim 36, the group II-group VI compound is one or more compounds of the group zinc (col 1, lines 45-52).**

**Regarding claim 39, the sputtering is reactive sputtering.(col 3, line 56).**



**Claim 35 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Kudo et al. et al. as applied to claim 34 above and in view of the following remark.**

Kudo et al. et al. do not teach the group II-group VI compound is zinc telluride

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the group II-group VI compound is zinc telluride which are commonly used to obtain the best resultant semiconductor, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended application.

When responding to the office action, Applicants' are advice to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung A. Le whose telephone number is (571) 272-1784. The examiner can normally be reached on Monday-Friday 8:00am- 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUNG A. LE  
Primary Examiner  
Art Unit 2818

